Thin Solid Films, 178 (1989) ix–xvi

Contents

PLENARY LECTURE

Present status and future prospects of Langmuir–Blodgett film research . . . 1
H. Kuhn (Göttingen, F.R.G.)

CHARACTERIZATION OF MONOLAYERS AT LIQUID–GAS INTERFACES

Aspects of Langmuir trough design in relation to the study of molecular monolayers of polymers and condensed films 17
B. R. Malcolm (Edinburgh, U.K.)

Characterization of Langmuir monolayers and Langmuir–Blodgett-deposited multilayers of ω-functionalized sulphide acids 27
D. M. Taylor, O. N. Oliveira, Jr., C. J. M. Stirling, B. Z. Guo and S. Tripathi (Bangor, U.K.)

"Thermally stimulated area relaxations" of insoluble monolayers and densification of Langmuir–Blodgett films with "isobaric thermal treatment" of monolayers 37
T. Kato, K. Ohshima and K. Suzuki (Utsunomiya, Japan)

Effects of additive spreading solutions to make stable monolayers 47
T. Ishii (Yokohama, Japan)

Control of interfacial equilibria by local charge distribution and average surface potential. 53
D. Möbius, W. Cordroch, R. Loschek, F. C. Li, A. Dhathathreyan and V. Vogel (Göttingen, F.R.G.)

Detection of longitudinal waves in resonance with capillary waves at the air–water interface by energy transfer 61
W. Budach and D. Möbius (Göttingen, F.R.G.)

Investigation of a fatty acid monolayer at the air–water interface using a current-measuring technique 67
M. Iwamoto and Y. Majima (Tokyo, Japan)

Lateral conduction at a monolayer–water interface 73
H. Morgan, D. M. Taylor and O. N. Oliveira, Jr., (Bangor, U.K.)

Disclination recombination kinetics in water-surface monolayers of 22-tricosenoic acid 81
A. M. Bibo and I. R. Peterson (Mainz, F.R.G.)

Experimental study of the stability and metastability of palmitic acid 93
O. Albrecht (Torrance, CA, U.S.A.)

Molecular arrangements of photochromic spiropyrans on a subphase 103
E. Ando, M.-A. Suzuki, K. Moriyama and K. Morimoto (Osaka, Japan)

The fractal aspects of *suminagashi* and marbling 109
T. Ishii and J. Muro (Yokohama, Japan)

A convection-free monolayer trough for fluorescence microscopic monitoring of ultrathin organic films 115
F. Mojtabai (Mountain Lakes, NJ, U.S.A.)

SURFACE RHEOLOGY AND MONOLAYER TRANSFER

Variations in the surface free energy of fatty acid Langmuir–Blodgett multilayers 125
I. Robinson, J. R. Sambles (Exeter, U.K.) and N. A. Cade (London, U.K.)

Improvement of Langmuir–Blodgett film structure by dynamic surface pressure control 137
T. Nakayama, S. Egusa, N. Gemma, A. Miura and M. Azuma (Kawasaki, Japan)

Convective monolayer compression in channel flow: behaviour and transfer of soluble and insoluble films 145
W. Nitsch and C. Kurthen (Garching, F.R.G.)

Vertical dipping method as a means of controlling the in-plane molecular orientation in Langmuir–Blodgett films 157
M. Sugi, N. Minari, K. Ikegami, S.-I. Kuroda, K. Saito and M. Saito (Ibaraki, Japan)

Surface pressure distribution of spread monolayers during compression 165
S. Egusa, T. Nakayama, N. Gemma, A. Miura and M. Azuma (Kawasaki, Japan)

In situ measurement of the pressure drop in a Langmuir–Blodgett film during fast deposition 171
O. Albrecht, T. Ginnai, A. Harrington and D. Marr-Leisy (Torrance, CA, U.S.A.)

Fabrication of copoly(methacrylic acid–methylacrylate) Langmuir–Blodgett films using a moving-wall-type Langmuir–Blodgett trough 175
H. Kumehara, T. Kasuga, T. Watanabe and S. Miyata (Tokyo, Japan)

Design of a new Langmuir–Blodgett trough with the zone-heating mechanism above the water surface 183
T. Kasuga, H. Kumehara, T. Watanabe and S. Miyata (Tokyo, Japan)

An apparatus for the study of molecular monolayers compressed at the air–water interface with uniform shear 191
B. R. Malcolm (Edinburgh, U.K.)

Characterization of *N*-*N*′-diarachidoylindigo transferred onto a surface acoustic wave device 197
I. Vikholm and H. Helle (Tampere, Finland)

Z-type films from diacetylene amphiphiles 203
R. Popovitz-Biro, D. J. Hung, E. Shavit, M. Lahav and L. Leiserowitz (Rehovot, Israel)

STRUCTURAL CHARACTERIZATION

Thermal desorption of Langmuir–Blodgett monolayers 211
J. P. Jones and G. M. Webby (Bangor, U.K.)

X-ray photoelectron spectroscopy study of lipid-free multilayer systems of copper phthalocyanine tetrasulphonate 221
X. D. Chai, K. Tian, H. J. Chen, X. Y. Tang, T. J. Li (Changchun, China), Z. Q. Zhu (Kaifeng, China) and D. Möbius (Göttingen, F.R.G)

Effects of heating on the molecular orientation of polymeric lipids 227
L. B. Coleman, T. G. Fiske, P. Stroeve, M. A. N. Coelho, S. Dong (Davis, CA, U.S.A.), H. Ringsdorf and J. Schneider (Mainz, F.R.G.)

Langmuir–Blodgett films of polyheterocycles: a study with synchrotron radiation techniques 233
T. A. Skotheim, X. Q. Yang, J. Chen, T. Inagaki (Upton, NY, U.S.A.), M. den Boer (New York, NY, U.S.A.), S. Tripathy, L. Samuelsen (Lowell, MA, U.S.A.), M. F. Rubner, K. Hong, I. Watanabe (Cambridge, MA, U.S.A.) and Y. Okamoto (New York, NY, U.S.A.)

Monolayer formation characteristics of novel organic molecules with non-linear optically active moieties. 243
S. S. Kumar, R. S. Kumar, L. A. Samuelson, J. Kumar, A. Blumstein and S. K. Tripathy (Lowell, MA, U.S.A.)

Polyesters and polyurethanes as prepolymerized materials for Langmuir–Blodgett films: preparation and characterization of multilayers. 253
D. Nerger, H. Ohst, H.-C. Schopper and R. Wehrmann (Krefeld, F.R.G.)

Forces between carboxylic acid layers in divalent salt solutions. 261
J. M. Berg and P. M. Claesson (Stockholm, Sweden)

Langmuir–Blodgett films of pure long-chain nitroxides, their mixtures and mixtures with stearic acid studied by electron spin resonance 271
G. Martini, F. Bonosi, M. F. Ottaviani and G. Gabrielli (Florence, Italy)

Orientation evaluation of polyion complex Langmuir–Blodgett films by Fourier transform IR transmission and reflection–absorption spectroscopy . 281
J. Umemura, Y. Hishiro, T. Kawai, T. Takenaka (Kyoto, Japan), Y. Gotoh and M. Fujihira (Tokyo, Japan)

Structural investigations on low-temperature-polymerized monolayers of a diacetylenic bronco lipid 289
R. Steitz, I. R. Peterson, I. Voigt-Martin and H. Möhwald (Mainz, F.R.G.)

Characterization of Langmuir–Blodgett films of cadmium stearate by Penning ionization electron spectroscopy 305
Y. Harada, H. Hayashi (Tokyo, Japan), H. Ozaki (Nagoya, Japan), T. Kamata, J. Umemura and T. Takenaka (Kyoto, Japan)

Novel superlattice composed of crystalline monolayers and amorphous monolayers 313
S. Okada, H. Nakanishi, H. Matsuda, M. Kato (Ibaraki, Japan), T. Abe and H. Ito (Yokohama, Japan)

Self-assembled and Langmuir–Blodgett films of thiocarbaminates: a comparative study 319
Th. Arndt (Mainz, F.R.G.), H. Schupp and W. Schrepp (Ludwigshafen am Rhein, F.R.G.)

Supermolecular engineering in Langmuir–Blodgett films 327
S. Palacin, (Gif sur Yvette, France)

Deposition and structure of Langmuir–Blodgett films of ferric hydroxystearate 341
K. Yang, J. Mu, X. Feng and J. Chen (Shandong, China)

Adhesion of fatty acid in Langmuir–Blodgett films 347
S. Miyauchi, S. Arisawa (Tokyo, Japan), T. Yamada, H. Yamamoto (Chiba, Japan) and R. Yamamoto (Tokyo, Japan)

Langmuir–Blodgett films containing heterocycles: mixing of amphiphilic compounds 351
K. Isomura, Y. Oozono, K. Takehara, H. Taniguchi, M. Era, T. Tsutsui and S. Saito (Fukuoka, Japan)

Langmuir–Blodgett films of long-chain derivatives of amino acid containing aromatic rings 355
H. Nakahara, H. Endo, K. Fukuda (Urawa, Japan) and M. Sisido (Yokohama, Japan)

Langmuir–Blodgett films of octa-alkyl phthalocyanines 361
H. Nakahara, K. Fukuda, K. Kitahara and H. Nishi (Urawa, Japan)

Monolayers and Langmuir–Blodgett films of amphiphilic cyanine dye with a mesogenic unit in the hydrophobic part: effect of matrix molecules 367
M. Matsumoto, H. Miyasaka, T. Sekiguchi, M. Tanaka, H. Tachibana, T. Nakamura, E. Manda, Y. Kawabata and M. Sugi (Ibaraki, Japan)

Langmuir–Blodgett films of polyallylamine modified with long perfluoroalkyl chains by urea bonds 373
M. Tamura, H. Ishida and A. Sekiya (Ibaraki, Japan)

Preparation of Langmuir–Blodgett films of long-chain alkylammonium salts 381
K. Tajima, M. Takahashi (Yokohama, Japan) and K. Kobayashi (Tokyo, Japan)

Well organized Langmuir–Blodgett films based on push–pull carotenoids . . 387
S. Palacin (Gif sur Yvette, France), M. Blanchard-Desce, J. M. Lehn (Paris, France) and A. Barraud (Gif sur Yvette, France)

Studies on Langmuir–Blodgett films fabricated from the monolayers containing polydiacetylene and polythiophene derivatives 393
A. Tsumura, T. Kurata, S. Suzuki, H. Nobutoki, H. Koezuka and T. Moriwaki (Hyogo, Japan)

Photochemical properties of mixed monolayer assemblies containing carbazolyl chromophores 399
T. Nagamura, K. Toyozawa, S. Kamata and T. Ogawa (Fukuoka, Japan)

Structure and properties of Langmuir–Blodgett films made from polyamides. 403
D. Lupo, W. Prass and U. Scheunemann (Frankfurt, F.R.G.)

The structure and physical properties of *N*-docosylpyridinium-bistetracyanoquinodimethane Langmuir–Blodgett films 413
T. Nakamura, M. Matsumoto, H. Tachibana, M. Tanaka, E. Manda and Y. Kawabata (Ibaraki, Japan)

Structural control and characterization in mixed and alternate Langmuir–Blodgett films of simple long-chain compounds 421
T. Shiozawa and K. Fukuda (Urawa, Japan)

Molecular orientation in alternating Langmuir–Blodgett films studied by Fourier transform IR transmission and reflection–absorption spectroscopy 427
T. Kamata, J. Umemura, T. Takenaka (Kyoto, Japan), K. Takehara, K. Isomura and H. Taniguchi (Fukuoka, Japan)

Two types of hydrocarbon chain packing in Langmuir–Blodgett films: interdigitated and abutted tails 433
V. V. Erokhin, Yu. M. Lvov, L. Tu. Mogilevsky, A. N. Zozulin and E. G. Ilyin (Moscow, U.S.S.R.)

In-plane anisotropy in Langmuir–Blodgett films of a copper phthalocyanine derivative 439
K. Ogawa, H. Yonehara, T. Shoji, S.-I. Kinoshita, E. Maekawa (Sakura, Japan), H. Nakahara and K. Fukuda (Urawa, Japan)

Structural investigations of Langmuir–Blodgett films of 2-docosylamino-5-nitropyridine, a new type of non-centrosymmetric multilayer for use in non-linear optics 445
G. Decher, F. Klinkhammer, I. R. Peterson and R. Steitz (Mainz, F.R.G.)

Comparison of thermal stability of Langmuir–Blodgett films of icosanoic acid and cadium icosanoate 453
K. Kobayashi, K. Takaoka and S. Ochiai (Tokyo, Japan)

Influence of substrate surface on Langmuir–Blodgett multilayers 459
K. Orihara, M. Tazaki (Yonezawa, Japan), T. Furuno and H. Sasabe (Saitama, Japan)

Swelling behaviour and stability of Langmuir–Blodgett films deposited on a quartz crystal microbalance in a water phase 465
Y. Okahata and K. Ariga (Tokyo, Japan)

Surface-pressure-induced chromism in rhodamine monolayers 473
M. Yoneyama, H. Tanaka, T. Nagao, Y. Koike and T. Murayama (Yokohama, Japan)

Direct observation of the surface structure of Langmuir–Blodgett films with scanning electron microscopy 477
T. Nakayama, N. Gemma, A. Miura and M. Azuma (Kawasaki, Japan)

Surface decoration of Langmuir–Blodgett films with evaporated silver islands 483
C. Bubeck (Mainz, F.R.G.)

Morphology in Langmuir–Blodgett multilayers of nitroaniline derivative–fatty acid mixtures 493
Y. Miyamoto, K. Kaifu, M. Saito, M. Kato and K. Kawamura (Tokyo, Japan)

Electrical defect visualization in insulating Langmuir–Blodgett films 499
J. P. Bourgoin, S. Palacin, M. Vandevyver and A. Barraud (Gif sur Yvette, France)

Conducting defects in Langmuir–Blodgett films 505
H. Matsuda, H. Kawada, K. Takimoto, Y. Morikawa, K. Eguchi and T. Nakagiri (Kanagawa, Japan)

Temperature-dependent electron diffraction studies of cadmium arachidate monolayers and multilayers 511
C. Böhm, R. Steitz and H. Reigler (Mainz, F.R.G.)

Determination of the thickness and distribution of a Langmuir–Blodgett film using soft X-ray reflection 519
A. Momose, Y. Hirai, I. Waki, S. Imazeki, Y. Tomioka, K. Hayakawa and M. Naito (Tokyo, Japan)

A new method for measuring refractive index and thickness of Langmuir–Blodgett films of ttb–$PcSiCl_2$ 525
Y. Li, X. Wang, X. Pang, Y. Hua and J. Fan (Beijing, China)

Dependence of polarized surface-enhanced resonance Raman spectrum of Langmuir–Blodgett monolayer film on the incident light angle 529
K. Seki and H. Nakanishi (Kawasaki, Japan)

X-ray photoelectron spectroscopy study of the synthesis of copper sulphide in Langmuir–Blodgett films 535
H. Chen, X. Chai, Q. Wei, Y. Jiang and T. Li (Changchun, China)

Control of aggregated structures in monolayers and multilayers by mixing at the molecular level of two azobenzene-linked amphiphiles. 541
X. Xu, M. Era, T. Tsutsui and S. Saito (Fukuoka, Japan)

J-aggregate formation of long-chain merocyanine dye in various mixed monolayers and its exciton behaviour in Langmuir–Blodgett films. 549
H. Nakahara, H. Uchimi, K. Fukuda (Urawa, Japan), N. Tamai and I. Yamazaki (Okazaki, Japan)

Correlation between electron spin resonance and optical anisotropy in Langmuir–Blodgett films of a merocyanine dye 555
S.-I. Kuroda, K. Ikegami, K. Saito, M. Saito and M. Sugi (Ibaraki, Japan)

LETTERS

Commonly used criteria for checking the cleanliness of Langmuir–Blodgett equipment and spreading solvents are not sufficient 563
O. Albrecht (Torrance, CA, U.S.A.)

AUTHOR INDEX 567